

**FINAL NO FURTHER ACTION JUSTIFICATION DOCUMENT
OPERABLE UNIT 16 - LOW PRIORITY SITES
ROCKY FLATS PLANT**

DN/101292/EES/RFPbod

A-650-00010

REVIEWED FOR CLASSIFICATION/UCNI
By W. J. [Signature]
Date 10/21/92 (MNH)

**RESPONSES TO
COLORADO DEPARTMENT OF HEALTH COMMENTS
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General Comments

CDH-G1: The Division agrees that most of the IHSSs within OU 16 will probably not need further characterization to justify that no further action is warranted. However, as we stated in our comments to the draft version of this document, in order to conclusively demonstrate that no further action is justified at a site, DOE must demonstrate that a site does not present an unacceptable risk to human health and the environment. Normally, this demonstration is based on information collected in the RFI/RI. However, since no RFI/RI has been done for the IHSSs in OU 16, an alternative demonstration of the lack of unacceptable risk becomes necessary. This demonstration could be accomplished by estimating the current concentration of contaminants at the sites (using dilution/degradation models or published experimental rates of transport/degradation). These estimated contaminant concentrations could be compared to action levels for the various contaminants in affected media which would present unacceptable risks considering direct exposure at the source (see our comments to the draft NFAJ). This type of demonstration would require that DOE include, in addition to the risk comparison, detailed discussions on the chemical properties, fate and transport variables, and toxicity for contaminants involved in the OU 16 sites. (The Division will not be able to accept demonstrations of low risk which only include phrases such as "it is unlikely ground water was affected" or "since the release, dilution has very likely lowered contaminant levels to below detection limits".)

A major reason for requesting this information is that when a "No Action" ROD/CAD is developed for these sites in OU 16, this information will undergo public comment scrutiny. In the absence of irrefutable sample data, the public will want a believable alternative demonstration that the sites do not present unacceptable risk levels.

Response: The proposed actions and rationale presented in Chapter 3.0 have been expanded for several OU16 IHSSs. Qualified statements of low risk such as those identified in this comment have been replaced with conclusions based on published health risk data and results of dilution/degradation modeling. Details of these changes are discussed under Specific Comments below. Additional historical information for IHSSs 196 and 197 has been incorporated into Chapter 2.0 to support the proposed actions for each of these IHSSs.

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Specific Comments

CDH-S1: Figure 2-9: This potentiometric surface map needs the actual water level data plotted next to the well points. In addition, the date that the water level data was collected needs to be included in the map legend.

Response: Figure 2-9 has been modified to include the requested information.

CDH-S2: Section 3.2.1: The location and extent of IHSS 185 indicated on Figure 2-9 is different from that shown in the Historical Release Report (HRR). Please correct this document or indicate why the HRR is in error.

Response: The location and extent of IHSS 185 indicated on Figure 2-9, as well as the description of IHSS 185 provided in Section 2.3.1, are consistent with the HRR. The apparent discrepancy noted in this comment may be due to the small scale of Figure 2-9 relative to HRR figures that show IHSS 185.

CDH-S3: Section 3.2.2: Please expand the text to include a more comprehensive discussion of the toxicity, degradation products, and degradation rate of ethylene glycol in all environmental media (soil, sediment, surface water, and ground water). In addition, please clarify whether or not this dilute ethylene glycol solution could have been contaminated with metals.

Response: Results of degradation modeling for ethylene glycol in all environmental media based on published degradation rates have been incorporated into Section 3.2.2. The results are compared to EPA health risk data for ethylene glycol to support the proposed no further action for IHSS 192.

Discussions with Building 708 utilities personnel indicate that the system used to circulate antifreeze is fabricated of black iron with threaded connections. Potential metals contamination in used antifreeze would therefore be limited to traces of iron from pipe corrosion. Because this information was consistent with all previously published information regarding potential contaminants of concern at IHSS 192, it was not incorporated into the text.

CDH-S4: Section 3.2.3: Please expand the text to include a comprehensive discussion of the toxicity and chemical fate and transport properties of amines including, at least, degradation rates in all environmental media, degradation products, and availability to transport.

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Response: Additional information obtained from Building 443 personnel and the EG&G Industrial Hygiene Department indicated that the amine of concern at IHSS 193 is diethylaminoethanol, a commercially-produced corrosion inhibitor for steam systems. Health risk information for this amine has been added to Section 3.2.3.

CDH-S5: Section 3.2.4: It is inappropriate to compare the concentration of tritium to maximum background levels. Instead, comparison should be made to the statistically determined mean value.

In addition, please expand the text to include a comprehensive discussion of the toxicity and chemical properties of tritium including its radioactive properties (half-life, etc.).

Response: Section 3.2.4 has been modified to compare tritium measurements associated with IHSS 194 to the range of background values reported in the Background Geochemical Characterization Report for the Rocky Flats Plant. Information on the half-life of tritium and its risk-based EPA public exposure standards has also been included.

CDH-S6: Section 3.2.5: Please expand the text to include a comprehensive discussion of the chemical properties and toxicity of nickel oxide.

Response: Section 3.2.5 has been expanded to include more detailed analysis of migration pathways for nickel oxide from IHSS 195, the potential for migration to have occurred given the chemical properties of nickel oxide, and EPA risk-based exposure standards for nickel.

CDH-S7: Section 3.2.6: The Division agrees that IHSS 196 needs further investigation. However, we disagree that the current OU 5 investigation for IHSS 115 (Old Landfill) is currently scoped to investigate IHSS 196. In fact, based on the location of IHSS 196 shown on Figure 2-9 and in the HRR, no portion of the IHSS 115 investigation will incorporate the IHSS 196 area. If this is true, either a separate Field Sampling Program should be developed for IHSS 196 or the OU 5 RFI/RI Workplan should be amended to allow for investigation of the IHSS 196 area. (Based on recent discussions with the DOE OU 5 project manager, further site research done for the HRR indicates that IHSS 196 could be the so-called "Landfill Pond" which is within the IHSS 115 boundary.

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More research on the exact location of this pond is necessary and should be included in a revised version of this document.)

Response: Additional historical information provided in Section 2.3.6 indicates that IHSS 196 is the "Landfill Pond" referred to in this comment. The proposed action and rationale for IHSS 196 presented in Section 3.2.6 has been modified to incorporate this information. The field sampling plan for IHSS 115, OU5 (Original Landfill) is provided as Appendix E to support the position that IHSS 196 will be addressed by the IHSS 115 investigation.

CDH-S8: Section 3.2.7: The location and extent of IHSS 197 indicated on Figure 2-9 is different from that shown in the Historical Release Report (HRR). Please correct this document or indicate why the HRR is in error.

Because of the uncertainty of the location of this IHSS, the waste material volumes disposed therein, and whether all this waste was removed during PA perimeter construction, the Division believes that a no further action determination for this IHSS either requires further historical evidence that all waste was removed or requires further investigation. If it needs further investigation, we recommend that it be added to OU 13.

Response: The location and extent of IHSS 197 shown in Figure 2-9 has been modified to be consistent with the HRR. Additional historical information for this IHSS has been provided in Section 2.3.7. Based on this newly obtained information, Section 3.2.7 has been amended to propose that investigation of IHSS 197 be included with investigation of IHSS 117.1, OU13 (North Site Chemical Storage). The field sampling plan for IHSS 117.1 is provided as Appendix F.

CDH-S9: Table 3-1: The Division suggests the following changes to this table:

1) Except for IHSSs 196 and 197, the air, surface water, and ground water pathways have been eliminated because no source remains. It has been removed by either a specific removal action or by natural processes.

2) The pathways for IHSS 192 were not eliminated just because the source was contained by diversion. Hopefully, further discussion to be included in the text on the degradation of antifreeze will support that the source was removed by degradation and dilution, thereby eliminating complete pathways.

3) Nickel Oxide still remains in the area surrounding IHSS 195. Depending on its toxicity, pathways for Nickel Oxide may still be complete and need investigation.

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4) It is not clear whether all of the waste disposed in IHSS 197 has been removed or investigated. Therefore, potentially complete pathways still exist and need investigation.

Response: Table 3-1 has been modified in response to this comment and to maintain consistency with changes to Chapters 2.0 and 3.0.

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General Comments

EPA-G1: Nickel Oxide residues in IHSS 195 resulting from the reaction of Nickel (produced by combustion of Nickel carbonyl) with Oxygen may still be present in the bottom of the dry well or on the surface around the well. While it may be true that Nickel Oxide is not currently present at high concentrations, this document does not (comment not readable) levels that may pose a threat to human health. Toxicity for Nickel Oxide must be included in this document to allow evaluation of the need for further action at this IHSS. In the case Nickel Oxide is highly toxic, EPA will recommend that further investigations be conducted for IHSS 195.

Response: See response to comment CDH-S6. Section 3.2.5 has been expanded to include more detailed analysis of potential nickel migration from IHSS 195.

EPA-G2: EPA agrees with DOE's recommendation for further action at IHSS 196. Since IHSS 196 is located in the area of OU 5, EPA recommends DOE amending the Phase I RFI/RI workplan for OU 5.

Response: See response to comment CDH-S7. It is proposed that IHSS 196 will be addressed by the investigation of IHSS 115, OU5 (Original Landfill).

EPA-G3: It is unknown whether all the contamination in IHSS 197 was removed during the 1981 excavation activities. There exist the potential that contaminated areas were missed during the excavation. If this is the case, a source currently exists and the exposure pathways are complete. Therefore, EPA recommends that further action be conducted for this IHSS.

Response: See response to comment CDH-S8. Section 3.2.7 now proposes that investigation of IHSS 197 be included with investigation of IHSS 117.1, OU13 (North Site Chemical Storage), based on additional historical information provided in Section 2.3.7.